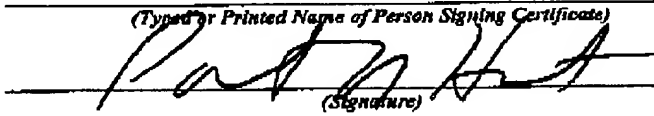


JAN 16 2006

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| CERTIFICATE OF TRANSMISSION BY FACSIMILE (37 CFR 1.8) | | | Docket No. KOT-0014 |
| Applicant(s): Chika Honda et al. | | | |
| Application No. 09/616,608 | Filing Date 07/14/2000 | Examiner Craig E. Church | Group Art Unit 2882 |
| Invention: X-RAY IMAGE RADIOGRAPHING METHOD AND RADIOGRAPHING APPARATUS | | | |
| <p>I hereby certify that this Combined Notice of Appeal & Petition for Extension of Time (2 pgs); Pre-Appeal Brief Request for Review (6 pgs) <small>(Identify type of correspondence)</small></p> <p>is being facsimile transmitted to the United States Patent and Trademark Office (Fax. No. 1-571-273-8300)</p> <p>on January 16, 2006 <small>(Date)</small></p> <p>Patricia A. Hart <small>(Typed or Printed Name of Person Signing Certificate)</small></p> <p> <small>(Signature)</small></p> <p>Note: Each paper must have its own certificate of mailing.</p> | | | |

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Docket No. KOT-0014

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|-------------|--------------------|---|-------------------|------------------|
| Appln. No.: | 09/616,608 | : | Confirmation No.: | 6146 |
| Applicant: | Chika Honda et al. | : | Group Art Unit: | 2882 |
| Filed: | July 14, 2000 | : | Examiner: | Church, Craig E. |
| Docket No.: | KOT-0014 | : | | |

For: X-RAY IMAGE RADIOGRAPHING METHOD AND RADIOGRAPHING
APPARATUS

January 16, 2006

VIA FACSIMILE TO 1-571-273-8300

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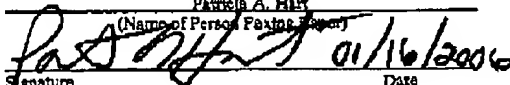
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed concurrently with a Notice of Appeal. This review is requested for the reason(s) stated on the attached sheet(s), which do not exceed more than five (5) pages.

Reasons begin on page 2 of this paper.

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| I hereby certify that this correspondence, consisting of 6 total pages, was facsimile transmitted to the United States Patent Office (Fax No. 1-571-273-8300) on | |
| January 16, 2006 | |
| (Date of Deposit) | |
| Patricia A. Hart | |
| (Name of Person Faxing Report) | |
|  | 01/16/2006 |
| Signature | Date |

Appl. No. 09/616,608
Docket No. KOT-0014

REASONS

I. BACKGROUND

First, applicants respectfully note that have made diligent efforts to be expedite prosecution, and have also cooperated with the highest level of decorum and courtesy. Accordingly, this appeal is not frivolous and is respectfully asserted to be warranted by errors in the rejections of record including dispositive factual errors regarding the claimed ranges and "reading errors" regarding what the cited reference actually teaches and suggests which have already been respectfully pointed out in rigorous fashion by applicants using charts and clear discussion.

For background, it also respectfully noted that Senior Examiner Church indicated in a telephone interview in October 2004 that applicants' invention strongly warranted a patent relating to a new contrast enhancement imaging technique -- but the claims needed amendment. Thus, the applicants agreed to withdraw their previous appeal and filed an RCE in order to cooperate and to expedite prosecution.

The sole independent claim was amended as follows in the RCE:

2. (Currently Amended) An X-ray image radiographing method of radiographing an object of a breast, comprising

a sharpness enhancing step of increasing a sharpness of an image lowered due to penumbra by enhancing an edge of the image with refraction contrast enhancement;

the sharpness enhancing step comprising steps of:

using an X-ray tube having a size D of focal spot defined by the following formula:

$$100 \mu\text{m} \leq D \leq 600 \mu\text{m};$$

setting a distance R1 between the X-ray tube and an object of a breast so as to be within a range defined by the following formula:

$$(D-7)/200 \text{ m} \leq R1 \leq 5 \text{ m}; \text{ and}$$

setting a distance R2 between the object and an X-ray detector so as to be within a range defined by the following formula:

$$0.15 \text{ m} \leq R2 \leq 1.4 \text{ m}.$$

In the first Office Action in the RCE dated 3/22/05, a new search was performed, and a new primary reference was cited against most all of the claims (2, 5, 6, 8-11 and 26) under 35 U.S.C. § 103(a), i.e., Wilkins, US 6,212,254.

Appl. No. 09/616,608
Docket No. KOT-0014

Any appeal should only be pursued if the Examiner's errors are clear. In this case, the Examiner cited Col. 8, lines 19-47 of Wilkins (which need to be read and understood in detail by the panel herein). However, the Examiner makes a technical error in "mixing and matching" the data described at Col. 8, lines 19-47 and ignoring the "teaching away" and context in which the ranges are specifically taught in order to enable Wilkins to function by Wilkins' own admission (note: Section II below discusses the specific teachings in detail).

Applicants pointed out this improper mixing and matching of Wilkins' data and the taking of Wilkins' data out of context clearly with a chart in the first response in the RCE filed on 5/23/05 at pages 5 and 6.

In response, in the Final Rejection dated 8/17/05, the Examiner at page 3 reasons that Wilkins must be taken for "all that it teaches including non-preferred embodiments" and adds the commentary that applicants' "teaching away" argument is "specious." Therefore, it is respectfully requested that the claimed ranges of claim 2, and what the Wilkins reference actually teaches and suggests, be accurately examined by this panel.

II. DISCUSSION OF TECHNICAL ERRORS IN THE FINAL REJECTION

As seen in present Figure 1, Claim 2 has three variables at issue,

1. "D" the size of the focal spot
2. "R1" the distance between the x-ray tube and an object (a breast)
3. "R2" the distance between the object and the x ray detector

In claim 2, the claimed ranges for the three variables need to be met for the sharpness enhancing step to work as claimed, i.e.:

the sharpness enhancing step comprising steps of:

using an X-ray tube having a size D of focal spot defined by the following formula:

$$100 \mu\text{m} \leq D \leq 600 \mu\text{m};$$

setting a distance R1 between the X-ray tube and an object of a breast so as to be within a range defined by the following formula:

$$(D-7)/200 \text{ m} \leq R1 \leq 5 \text{ m}; \text{ and}$$

setting a distance R2 between the object and an X-ray detector so as to be within a range defined by the following formula:

$$0.15 \text{ m} \leq R2 \leq 1.4 \text{ m}.$$

App'n. No. 09/616,508
Docket No. KOT-0014

However, the rejection of independent claim 2 at page 2 of the Final rejection is respectfully in error because the Examiner improperly mixes a 100 micron size focal spot size with 700 mm R1 and 700 mm R2 which Wilkin's specifically does not use together and which Wilkins teaches away from because it doesn't work. (Note: 700 mm = .7 m). Specifically, in the actual example disclosed in Wilkins 6,212,254, Wilkins uses "In FIG. 4 ... a nominal 10 micrometer diameter microfocus source" (see col. 8, lines 31-34) and not 100 μ m, because later at lines 44-47, Col. 8, of Wilkins says the 100 μ m sized source spot should not be used for enhanced contrast because a 100 μ m sized source spot "smears out the contrast."

This USPTO technical error was discussed in applicants response filed May 23, 2005, but the Examiner replied at page 3 of the Final Rejection that the 100 micron size was still a useable teaching and that he saw no "teaching away" by use of the 100 micron size. This makes no sense.

For example, in the Final Rejection the Examiner introduced this technical error into his reasoning when he wrote at page 3:

"Furthermore, Wilkins comment in line 44-47 of column 8 regarding a focus diameter of 0.1 mm refers to both the figure 4 and figure 5 examples and not just figure 4 as argued by the applicant, and the instant claims read on this configuration of a source size of .1 mm, SOD= 700mm and OID =700 mm." (*Emphasis added herein*).

Just to be clear, Wilkins specifically teaches use of a 10 μ m focal source (not 0.1 mm) at col. 8, line 33 in regards to Figure 4 and 10 μ m is outside of the claimed range. Also in reality, Wilkins at lines 44-47 says not to use 0.1mm (0.1 mm = 100 μ m) because it will "smear out the contrast." This is a straightforward example of "teaching away" and is thus not "specious" as alleged.

See also lines 29-30 wherein it is stated: "In each case, additional contrast can be seen over that expected for a normal contrast image. In particular in Fig. 4..."

Therefore, the point is that when lines Col 8, lines 19-47 are read and understood correctly that according to Wilkins a normal fine focus of 0.1mm or 100 μ m largely swears out the enhanced contrast of Fig. 4. See lines 40-47. Therefore, Wilkins teaches away from using 100 μ m because it doesn't create any enhanced contrast in Wilkin's opinion. Also, see Col. 9, lines 8-15 where it is specifically stated that a 20 μ m source or less is required to give

Appl. No. 09/616,608
Docket No. KOT-0014

"observable contrast." This what the applicants previously pointed out as "teaching away," and the Examiner termed "specious."

Also, as Col. 8, lines 35-37 specifically state:

"For FIG. 4 the source to sample and sample to film distances were both 700mm while for FIG. 5 the corresponding distances were 120 mm and 100 mm, respectively."

Therefore, "SOD= 700mm and OID=700 mm" only apply to Figure 4 -- and not to Figure 5 as well.

Therefore, just to be crystal clear, Wilkins does not teach or suggest having a focal spot size of 100 μ m, and a R1(SOD) of 700 mm and a R2(OID) of 700mm as the Examiner incorrectly argues in regards to present claim 2 in the quote above. In fact, Wilkins specifically teaches against using such a limitation by it own admission in order to avoid "smeared out" contrast.

Thus, the rejection is an improper technical "mixing" of the teachings and is also illogical because Wilkins does not work (no enhanced contrast) with the 100 micron sized D by his own admission because the contrast is "smeared out."

Thus, this is not merely an issue of a "non-preferred" 100 μ m range, but rather an explicit teaching that 100 microns should not be used because Wilkins in reality says that 20 microns or less is the spot size to be used for his invention to work correctly (see col. 9, lines 8-10).

However, the Examiner ignores the technical teachings and improperly redesigns Wilkin's device to somehow become a "smeared out non contrast enhanced device" (and also uses an improper hindsight analysis) in violation of MPEP 2143.01 wherein it stated that:

"THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART
UNSATISFACTORY FOR ITS INTENDED PURPOSE

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make

Appln. No. 09/616,608
Docket No. KOT-0014

the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)"

Therefore, it respectfully asserted that claim 2 and its dependent claims are allowable for the reasons above.

Also, it is respectfully noted that applicants also pointed out that the whole point of claim 2 is "a sharpness enhancing step" for a large 100 μ m up to 600 μ m focal spot size and after reading Wilkins anyone can see why a contrast enhancement step is necessary for large focal spot sizes, i.e., that is what this invention does; it overcomes the very problem Wilkins describes if a user wants to use a 100 μ m or larger focal spot size. Therefore, claim 2 is patentable over Wilkins because it solves the problem Wilkins acknowledges.

III. Other arguments

The arguments regarding dependent claims 7 and 29 and Wolbarst made by applicants in the response filed on August 17, 2005 are also valid and should also be responded to by the Examiner. Instead, the Examiner merely stated that these arguments stand rejected for "the reasons of record" in the Advisory Action and did not respond.

The Commissioner is hereby authorized to charge any additional fees that may be required for this submission, or credit any overpayment, to Deposit Account No. 06-1130.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

By: 

Daniel P. Lent

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